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Cows get along fine with robot

At a Harford County dairy, an automated system has taken over the time-consuming job of milking

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In an industry that is the essence of routine, David and Kate Dallam are undergoing a radical lifestyle change.

After 16 years of adhering to a rigid milking schedule on their Harford County dairy farm, the Dallams no longer must rise at dawn with the cows. They can go out to dinner or catch one of their children's ballgames without rushing home. David Dallam can spend more time in the fields, and Kate can tend their ice cream store.

After all, the robot minds the herd.

The Dallams, who run Brooms Bloom Dairy, a 240-acre farm in Creswell, recently installed a \$180,000 computerized system that milks the cows, tracks yield data -- even keeps the cows calm.

"This is a huge, labor-saving device that gives us a lot more flexibility," Kate Dallam said.

The Lely X-Link, which county officials say is the first of its kind in Maryland, operates around the clock and allows the cow to choose its milking schedule.

Farm officials hope this kind of technology will help keep dairy farming viable, particularly for family farms and small operations.

"The big advantage of robotics is that they give the farmer flexibility," said Kiera Finucane, a coordinator with the University of Maryland agriculture extension program. "If you free up time spent in the milking parlor, the farmer has more time to increase production in his fields, develop nutrition programs and tend to other managerial efforts."

Maryland dairy farms are disappearing at twice the national average rate, with 50 farms going out of production in the past two years, officials said. Anything that can stem that tide is welcome, Finucane said.

Robotic milkers, which work best with a herd of about 60 cows or fewer, have been popular in Europe and Canada for about 10 years, she said.

"They don't work on every farm and they are expensive, but they may be a real advantage in the long run," Finucane said.

The Dallams had been considering the purchase of an X-link in the future, but a fire in December pushed their plans forward. The blaze destroyed their barn and claimed 10 of their herd. As they rebuilt, the couple decided to install the milking machine.

Within four months, the Dallams built a new barn on the foundation of the old one and next to two towering silos, a familiar landmark along Route 543. The new structure houses stalls, a feeding room and an office.

"The fire was a life-changing day, but as devastating as it was, a lot of good came from it," Kate Dallam said.

After spending the winter on a nearby farm, the 43 cows returned in April to the new quarters and a milking machine that was manufactured in Holland.

"This is yet another example of Maryland farmers being innovators," said S. Patrick McMillan, assistant secretary of the state Department of Agriculture. "It is very encouraging to see this family make this kind of investment and stay on the farm to work in the dairy industry."

The Dallams are giving themselves and their cows time to learn the robotic system and adjust to the new method.

"The younger cows learned the quickest," Kate Dallam said. "They took to it like a new toy."

Though the cows appear to be adapting, David Dallam is reserving his endorsement. He confesses to being a little intimidated by the complexity of the machine. Still, he has worked through the initial glitches and has the consulting technician's number on speed dial.

"I can't tell others to jump into this yet," he said. "But by and large, the cows are taking to it fine. They like the routine of it."

Some cows are milked as frequently as every six hours, but the average is 2.5 times a day. And the system keeps track.

It notes the time, sanitizes the udder, milks the cow and records the yield. It tracks time between milkings for each animal and sounds an alert should one -- such as No. 344, which had not visited the machine in nearly 13 hours -- become overdue for milking.

"Under the old system, my husband milked every 12 hours," Kate Dallam said. "I doubt he missed 10 milkings in the last 16 years. At one time, we had 70 cows, and he did it all without help. He still does it without a human to help."

Sam Matthews, one of the first Pennsylvania farmers to install a Lely, said the machine is keeping him in business:

"In most of the Northeast, farmers are becoming an endangered species. This machine will extend their working life for years."

Matthews, 68, who farms 103 acres in Chester County, attended his first game at Camden Yards a few years ago, an outing that otherwise would have conflicted with the milking schedule.

"Going would have been unthinkable before the robot," said Matthews. "I just came home after what was a long game, checked the robot and went to bed."

The Dallams' demonstration of the Lely for Harford officials last month resulted in a \$20,000 increase in grant money the county makes available for emerging agricultural technology. Farmers can apply for a portion of the \$100,000 to pursue innovative projects, said John Sullivan, Harford's director of agriculture.

"You can milk a cow all you want, but there are other products and ways to diversify your operation," Sullivan said. "These grants can help farmers develop Web sites, market cow embryos or put together a marketing brochure."

The Dallams showed officials how their cows amble into a spacious milking box and stand on a soft rubber floor while a robot does the work.

A robotic arm cleans and sanitizes the udder and attaches four milkers to the teats. The computer recognizes each cow by size and shape of udder and prints out data, including time and yield. Within minutes, the milk is ready for processing and the cow is back with the herd.

The machine can detect diseases and check for discoloration or other problems in the milk and immediately divert that cow's milk from the supply.

Catering to the cows' innate sense of routine keeps the herd content, Matthews said.

"Cows like to do today what they did yesterday," Matthews said. "The robot feels the same every time so they don't have to adjust. They are less stressed and more productive."

That's the hope of the Dallams. So far, they haven't seen an increase, but they are expecting yield to rise by as much as 10 pounds per day per cow, up from the current average daily yield of 70 pounds.

"Theoretically, there should be a yield improvement, but that won't be until the herd has completely adjusted to the robot," he said.

The cows are getting used to the machine, but David Dallam has had a few sleepless nights -- once when a pump broke down and another time when the robot could not read a cow's transponder.

"It has its days," he said. "I am spending more time on the computer, but there is a lot less physical work."

Kate Dallam thinks it might run deeper than that.

"[He is probably] a little hurt that the cows took so well to the system," she quipped. "He has replaced himself with a robot."

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